1947 **File No.** 6572/36/(2) XII

B CLASS **DEPARTMENT**

Com. **BRANCH**

Subject:— Post-War requirements of Machinery for Irrigation Schemes.

13(K) 1947

File No. 6572/36/(2) XII Com. Br.

Ptd. Secrt. Slip. 24 A

G.R., G.D., No. 2408, dated 22-6-22.]

Correspondence

DOCKET SHEET

XII

Subject :—

File No. 6572/136(2)

P. W. DEPT.

Cont. BRANCH.

References :—

Date	To whom sent.	Notes and instructions.

Specifications for machinery.

Item No.3:-

(a) Cement Concrete Mixer 10/7 cft.:- The mixer to be portable and should be crude oil engine driven. It should be of filting drum type equipped with power loader adjustable water tank and fitted with a semi-rotary pump with hose pipes and fittings to fill the water tank. The batch capacity to be unmixed 10cft. and mixed 7cft. The mixer to be complete with all necessary accessories for its efficient working and should be of the maker's latest standard design.

In addition to the spares and tools included as standard equipment, spares recommended for two years normal working of the mixer and engine should be included.

(b) Cement Concrete Mixer 14/10cft.:- Generally as specified for 10/7 cft. mixer except that it should be of non-tilting drum type and should be of batch capacity unmixed 14cft. and mixed 10cft.

Item No4.

Stone crusher of 10 to 12 tons capacity and of the compound toggle type and of the maker's latest standard design and make. The machine to be complete with automatic oversize release and should be capable of breaking metal chips etc. to aggregate of suitable size for feeding into crushing rolls. The aggregate of suitable size from the crusher should be automatically lifted by a vertical elevator and should be conveyed by means of a conveying drum to the crushing rolls fixed by the side of the crusher. The crushing rolls should be the same capacity as that of crusher and should be capable of crushing metal to 3/8" and under. The crusher and the crushing rolls should be suitable for fixing side by side on concrete foundations and the conveyor the elevator and the rotary screen should be supported on well braced fabricated steel structure provided with base plates all ready for bolting down. All units should be suitable for flat belt

drives from a common countershaft which should be fitted with suitable pulleys for driving the different units and should be complete with roller bearing plummer blocks suit blo for fixing on concrete pillars. The countershaft should also have a suitable pulley for being driven byan A.C. electric motor which should aa also be supplied with the above unit.

Item No. 5:-

Crude oil engines of 10to 15 B.H.P.:- Engines should be of the vertical type cold starting airless injection, compression ignition type and are required fo r portable use. Theymay be used for driven pumps, boring machines etc. by means of flat belt in case of emergency.

Item No.6:-

(a) Pumps 600 G.P.M. :- Centrifugal pump for handling muddy or clear cold water and capable of pumping 600 G.P.M. against a total head of 60ft, and driven by means of adjustable 'V' belts by a cold starting crude oil engine. Bothe engine and pump to be mounted on a trolley fitted with C.I. wheels, turn table and draw bar.

(b) Centrifugal pumps with the same specification as for 6a but capable of pumping 120 G.P.M. against a total head of 120ft.

(c)Pumps with the same specifications as for pumps under 6a ~~but~~ capable of pumping 250 G.P.M. against a ~~head~~ total head of 60 ft.

(d) Centrifugal pumps without power units and trolleys, suitable for handling muddy water and arranged for flat belt drive and capable of deligering 250 G.P.M. against a head of 60 ft.

(e) Centrifugal pumps for handling muddy or clear cold water capable of pumping 3000 G.P.M. against a total head of 60ft. directly coupled to an A.C. electric motor, fitted on a common base plate. Motor to be suitable for A.C. 400/440 Volts 3 phase 50 cycles supply.

(f) Same specifications as for (e) above but

Capable of delivering 1000 G.P.M. against a total head of 60ft.

(g) Contractor's pumps : Irrigation pumps of double acting type capable of lifting 1250 gallons/hours with a 50 ft. lift 2" suction and 2" delivery.

(h) Hyers double acting pumps:- 2" suction and 2" delivery with a capacity of about 0.6 gallon per revolution of the handle.

(i) Semi rotary pumps :- Pumps with 2" suction and delivery with a capacity of 2100 gallons at 55 strokes per minute and capable of lifting and forcing water to a height of about 70 ft.

Item No. 7.

Cement Guns:- Capacity 40/ [illegible]/hour, air capacity 125 to 130 cft./minute com lete wit h a standard accessories, standard lengths of material air and water hoses. Cement Gun to be complete with oil and water separator, safety- valve, pressure gauge etc.

Item No. 8.

((a) Air compressors 200 to 250 cft./minute :- Compressors driven by crude oil engine mounted on a common portable trolley with steel wheels. Capacity 200 to 250 cft./minute at pressure of 100 lbs./per sq. inch. The compressor should be of the two stage air cooled and totally enclosed type and should be of the maker's latest standard design. The compressor should be fitted wit. suitable air receiver and a speed regulator to adjust the engine speed to the use of air. The engine should be suitable for being easily started by hand or be provided with an electric starting arrangement.

(b) Air compressor of a capacity of about 800 to 850 cft/minute at a pressure of 100 lbs./per sq. inch. and should be of the stationary, heavy duty, two stage water cooled type, directly coupled to an A.C. 400/440 Volts 3 phase 50 cycle electric motor.

(c) Rock drills Pilbar:-

(c) Rock drills 21½ lbs:- The drill mounted on a tripod and vertically actuated by compressed air at about 85 lbs./per sq. inch. with a consumption of not about 150cft./minute. The weight of the drill to be about 21½ lbs. and should be easily portable .

(d) Rock drills 50 lbs.:- Jack hammer drills weighing about 50 lbs. and hand-hold type and suitable for taking shanks ⅞" x 1".

(d) Rock drills 60 lbs:- Same specifications as for (d) above but suitable for taking shanks 1" x 1".

Item No. 9:-

Saline core drills:- Suitable for drilling of dam foundations. The core did to be 4" and the depth of average hole will be 300ft. and the deepest hole 150ft. Drilling will be through all kinds of rock and will be vertical. Drill to be equipped with a hoist or winch head mounted on the countershaft for raising and lowering the drill tools in the hole and for driving casing. Winch, drill head and a crude oil engine of standard manufacture all mounted on structural steel frame. Pumps may be supplied separately.

Item No.11:-

(a) Light Railway track:- 2 ft. gauge and 20lbs./yd. section with crossings, turn tables, left hand and right hand turn-outs but without sleepers. It is intended to use wooden sleepers. Fish plates and the required number of dog spikes should be supplied.

Item No. 32:-

Tipping wagons:- Suitable for 2 ft. gauge.

Item No 35:-

(b) Induction motors:- To be used for general purposes such as driving pumps, stone crushers, boring machines etc. by means of flat belt drive. Motors to be used of the screen protected and continuously rated type.

Item No. 38:-

(a) Lathes:- All geared head, sliding, surfacing and screw cutting gap bed lathe of the Maker's latest standard design and

make arranged for electric motor drive and complete with motor suitable for 400/440 Volts 3 phase 50 cycle supply.

Lathe to be complete with standard equipment and the following extras:-

one 4 Jaw independent chuck with back plate.

one 3 Jaw self centring chuck with back plate.

one face plate for full size of gap.

Vee belt drive and guards.

30 (b) Same as for 30 (a).

Item No. 31:-

Drilling machine:- 3' 0" motorised, centralised control radial, drilling, boring and tapping machine to drill in steel 2½" to tap 1½" to bore 10". Drive by flange type 400/440 volts 3 phase 50 cycle electric motor. Machine to be complete with motor.

Traverse of spindle along arm 1' 6"

Spindle to base plate max. 4' 6".

Spindle to bare plate min. 1' 0".

with portable tilting table 2' 6" x 2' 6" x 2' 0".

Item No. 32:-

Shaping machine:- Length stroke 16" complete with 400/440 volts 3 phase 50 cycle A.C. Motor arranged for 'V' belt drive and standard equipment, machine to be fitted with gear box and to have self-acting horizontal feed motion. Length of stroke with a graduated index to be adjustable while machine is in motion. Self-acting circular motion to tool box tobe provided as extra gear to admit 8" in length.

Item No. 33.

Hack sawing machine:- Capacity 10" x 10". Machine to befitted with 3 speed gear andbelt drive and feed governor and adjustable stop mechanism.

Item No.34:-

Sensitive drilling machine:- Capacity ½" in mild steel centre of spindle to column 7½". Machine arranged for self contained motor

driven by endless belt inclusive of 400/440 Volts 3 Phase 50 cycle A.C. Motor. With standard equipment and table raised or lowered by rack pinion and crank handle. Maximum distance spindle to table 2' 6".

Item No. 35:-

Tool and drill grinder:- Ball-bearing combined tool and drill grinder fitted with foot & loose pulleys with belt striking gear. To grind drills up to ½" dia. Fitted on the other side with 12" dia wheel for tool grinding.

Item No. 36:-

Universal grinder:- Double wheel universal grinder size of grinding wheels 16" x 1½". Machine complete with stand.

Item No. 37:-

Wood turning lathe:- Machine with standard equipment and countershaft.

Item No. 38:-

Circular saw bench:- of saw 24" size of table 4' 0" x 2' 6". Saw mounted on ball bearings machine with feet and loose pulleys and to be driven from a line shaft.

Item No. 39:-

Shearing Machine:- Standard portable steel plate shearing machine cutting sheets up to ½" inclusive. Length of blades 6". Machine complete with guide and adjustable stand.

Item No. 40:-

Crucible furnace:- Capacity 250lbs. central axis tilting furnace oil fired. pour-over-the-top-type crucible complete with suitable blower.

sd/-

Chief Engineer,
Public Works Department.

Original in file No. A9 6572/36 (1)

6572/36
6927

Genl. Br.

Purchase of machinery for P.W.R. Schemes.

In March 1946, this Deptt. had placed a number of indents (Vide statement at p. 183 of file No. 6572/36 Pt. II) on the D.G., I. & S., for machinery reqd. for the first two year plans of the P.W.R. Programme as envisaged by the former Govt. The machinery which consisted of 24 different items was estimated to cost Rs.69,00,000/- in the aggregate. It was later considered necy. to revise these indents in view of the likely changes in the original P.W.R. Programme. The D.G., I. & S. accordingly requested to withold further action on such of the indents on which no action was taken by way of firm orders and the C.E., P.W.D., was requested to work out the revised requirements in the meanwhile. As regards the indents on which firm orders were already placed by the D.G., I. & S., there was no alternative but to accept the machinery which, so far as this Deptt. was then aware, consisted of the following items:-

Road Rollers	107 Nos.	)
Concrete Mixers	4 "	) Estimated cost
Asphalt Rollers	2 "	) Rs. 22,00,000/- approx.

The action taken on these indents thus far has already been approved by H.M., P.W.D. and H.M., F.D., vide notes at pp. 185-190 of file No. 6572/36 Pt. II. Two more indents one for boring sets and the other for Screw Jacks have since been resubmitted with the approval of H.M., P.W.D. and H.M., F.D.

2. In this con. perusal is requested of letter No. MP 10(a) dated the 1-2-1946 from the Consulting Engr. to the G. of I. quoted in reply to your letter asking for the suspension of further action on the indents. It will be seen therefore that orders have already been placed for all the Road Rollers indented by this Deptt. viz. 150 Nos. which means 43 Road Rollers in

addition to the 107 mfd. to in para.1 above. There is no alternative but to accept these Road Rollers also as financial liabilities in respect of them has already been incurred. Regarding the other indents the C. of I. have suggested that fresh indents in their place should be submitted as soon as the revised requirements of this Govt. are worked out.

3. As regards the other indents, the C.E., P.W.D. was asked to work out the requirements in the light of the changes proposed in the original P.W.R. Programme . The C.E., P.W.D. has reported that it is not possible to work out the requirements of the entire programme, in the absence of Govt.'s final decisions in regard to some of the schemes. He has, however, submitted a list of his immediate requirements in con. with ~~the~~ Irrigation Project at Vir, Gangapur and Daddi - vide lists at pp. 1-9 ante. It will be noticed that the lists show the requirements in con. with the three Irrigation Project only and included several items not covered by the indents already submitted. These lists are not very helpful in the matter of revision of the indents unless it is decided to modify the relevant indent
levant indents so as to include the requirements of the three Irrigation Projects, only.

4. The C.E., P.W.D. proposes to submit fresh lists of his requirement as and when the necessity is felt. It may be observed as in this connection that it does not seem to be a convenient policy not to order machinery until it is finally decided to undertake the works. It is necy. that machinery is ordered sufficiently in advance as it generally takes about a year for its supply. It may not be possible for the C.E., P.W.D. to work out the exact requirements for the several schemes (some of which are yet to be appd.) but it should be possible for him to indicate a safe figure which, while not aiming to meet the full requirements, should at the same time be able to meet all immediate requirements. It is for consideration whether

Yes, I agree
Sd/- K.D.K.
9-4-47.

I also think so. Programme of amounts should be spent on works under different heads - Road, Buildings, Irrign., Public Health etc. - in the next five years has been fixed now & it should be possible to frame an indent of requirements of machinery for its fairly accurately. A safe indent to meet immediate requirements may be drawn up as suggested.

Id/- K.D.K.
2-4-47.

the C.E., P.W.D. may be asked towork out his requirements accordingly.

4. The several sections of D.G., of I. & S. are in the meanwhile pressing for the final disposal of the indents already submitted as it is not possible to keep the indents pending indefinitely. Some of the indents have also been cancelled. As submission of fresh indents will take some time the D.G., I. & S. may If appd., beintimated that the indents may be treated as withdrawn and that fresh indents will be submitted as soon as possible.

Yes.
Id/- K.D.K.
2-4-47.

5. The C.E., P.W.D. has also suggested that Govt. should make direct purchases of machinery instead of through the D.G., I.& S. as the former course is quicker and more economical. There is no compulsion on Provl. Govts. to make purchases of machinery through the D.G., I. & S. The D.G., I.& S., however, enjoys certain advantages in regard to the securing of Import Licenses etc. and also by way of contact with the allIndia market. On the other hand the procedure of making purchases by direct contact with the supplies is quicker though there is no reason why it should be more economical. As the machinery for the projects already in hand will be immediately reqd. it is for consideration whether the C.E. P.W.D. may be permitted to make direct purchases only of such items of machinery as are immediately reqd. after calling for quotations and obtaining Govt.'s approval before firm orders are placed.

This procedure may be tried in a few cases to begin with and find out whether it is quicker and more economical.

Id/- K.D.K.
2-4-47.

6. Road Rollers - The position of Road Rollers needs tobe reviewed. The C. of I. have intimated that they have placed orders, through their Bulk Procurment Scheme, for all the 150 Road Rollers indented by this Deptt. As financial liability in respect of these Road Rollers has been incurred all these Road Rollers will have to be accepted.inIn May 1945, Govt. had placed another indent for 68 Road Rollers in con. with normal P.W.D. works. Thus in all 218 Road Rollers have been ordered. Against these indents only 26 Road Rollers have so far been recd. and it will take at least another two years for the balance to be supplied.

7. The number of Road Rollers with this Deptt. before the war was 153. It has seperately been estimated that this Deptt. would require about 350 working Road Rollers in 1949 tocarry out the P.W.R. Programme. After taking into account the probable write-offs from the existing 153 Rollers which are very old, it was estimated that about 267 new Road Rollers will be reqd. by 1949.

This perhaps needs revision for the present modified Road programme.

Id/-K.D.K.
2-4-47.

8. The Road Rollers ordered by the G. of I. for this Deptt. are to beobtained against their scheme for Bulk Procurment from U.K. They will be relatively cheaper as they will be supplied without the dealer's commission in India. In view of thedes modifications in the original Road programme this Deptt. may not require as many Road Rollers as previously estimated but having regard to the fact that there have been replacements since 1937 and also bdcause most of the existing Road Rollers which were loaned to the Defence Deptt. and roughly handled, will have tobe evidently written off shortly, it appears that the 218 Road Rollers will not be in excess of the actual requirements.

I agree.
Id/- K.D.K.
2-4-47.

9. The question of Road Rollers will be seperated from themain case and dealt with independently hereafter.

10. These papers may be submitted to H.M., P.W.D. after u.o.r. to the F.D.

Thro' D.F. (P.W.D.)

Id/-Y.S.K.
29-3-47.

Id/-G.S.F.
1-4-47.

Margins
Id/-K.D.K.
2-4-47.

The machinery is ordered on the assumption that all the 3 projects will will be undertaken simultaneously. Will D.S.(I) please say if this is so and also give his opinion in general on the necessity and the

qtty. of the machinery asked for.

Id/-D.B.A.
3-4-47.

The cost of the machinery to be indented for the three major irrigations schemes will be in the neighbourhood of several lakhs of rupees. Govt. should be satisfied on the following points before approving the indent.

(1) The Daddi Project is yet to come up for adm. approval. Would it not be premature to indent machinery for that project? If Govt. is hundred percent certain that his project would be sanctioned in the near future then also should the machinery be ordered.

This project involves the participatio-n of several Indian States and am afraid a great deal of time will be spent in negotiations regarding the terms of agreements.

It therefore does not seem advisable to indent any machinery for the Daddi Project at present.

2. The Vir and Gangapur projects have been submitted to Govt. for securing adm. approval and machinery may be indented on the assumption that the projects will be sanctioned by Govt.

3. Coming to the actual requirements of the machinery the following points need clarification.

(a) Are the works tobe executed on contract, Departmentally or through a combination of the two systems?

In case the works are to be executed by big contractors are they likely to make use of the Govt. machinery or prefer to use their own plant? It may be mentioned that the Bhatgar and the Bhandardara dams were constructed departmentally using Govt. machinery and with the help of piece workers. The conditions today are however very different. It is not improbable that contractors may offer to execute the works at fairly attractive terms.

(b) If it is decided to employ Govt. machinery on the works what type would be most suitable and economic? In the indent provision has been made for most of the machinery to be electrically operated. It is however not clear whether other types have been considered for the purpose of comparison.

(c) It is presumed that the types and sizes of the various items of machinery have been arrived at after careful consideration of the use to which these will be put. It is not possible to verify this in the Secty. Perhaps the Secy. would like to discuss this with the Chief Engineer. I understand Mr. Limaye is mainly responsible for drawing up the indent and if the Secy desires I may have a preliminary discussion with him.

Id/-O.N.P.
5-4-47.

I agree with the Dy. Secy. (I.&R.)'s last paragraph and would like this done very early. The C.E.,P.W.D. may be asked to discuss the matter with me when he is next in Bombay.

Id/-N.R.S.
7-4-47.

Id/-D.
7-4-47.

Send a phone message to fix a meeting with Mr L.

Id/-O.N.P.
8-4-47.

VIR DAM PROJECT.

Total quantity of masonry = 80,00,000 Cft.
Mortar required at 40% = 8 x 0.4 = 32,00,000 Cft.

Assuming that the work willbe completed within five years - two years for excavation - three ydars for superstructure.

The rate at which mortar will be required =

$$\frac{32,00,000}{3} = 11,00,000 \text{ Cft. per year.}$$

A 10/7 concrete mixer has a capacity of 1600 Cft./day (Miller's data).

Assuming 240 working days in a year.

Each mixer will mix 1600 x 240 = 384000 Cft. of mortar/ year.

Therefore $\frac{110000}{384000}$ = 3 mixers will be required.

Keeping one as spare four mixers will be required.

Two 14/10 and two 10/7 mixers are to be used.

Than 10/7 mixers it is considered desirable to have two 10/7 mixers as indent. Although 14/10 mixers have a bigger capacity mixers as they are more portable.

Total mortar 32,00,000Cft.

Therefore sand required = 32,00,000 Cft

Stone crushers indented have a capacity of 80 to 12 tons hour. 10 tons/ hour.

= 80 tons /day.
240 x 80 tons/year (assuming 240 working days in a year)
80 x 240 x 2240 lbs./year.
4 x 43 x 2240 = 430000 Cft./year.

Assuming that crushing can be started after one year each crusher will crush 430000 x 4 = 1,72,0000 Cft. during the 4 year

Two sets will be required and the old set which is at present available at Bhatgar will remain as an extra crusher in case of any break downs.

Total quantity of excavation = 12 Meft.

Excavation in soft material like hard shadu, gravel, sand silt or soil	= 9 Meft.
Excavation in rock	= 3 Meft.
Total	12 Meft.

Proposed rate of excavation @ 6 Mcft./year or assuming 240 working days.

$$= \frac{6{,}000{,}000}{240} = 25000 \text{ cfs./day.}$$

The cranes indented for Vir Dam are 2 of 3 tons and 2 of 2 tons. They will thus remove 10 tons of material or roughly 224ft. of spoil at a lift. As part of the material will be lifted by cranes and part by hand the number of cranes indented is considered enough for the work at Vir.

Sd/-

for Chief Engineer.
Public Works Department.

Please see noting at pn. 77-3/4.

I have discussed this question with Mr. Limaye who later furnished me with additional information.

2. I understand that the present indent does not include the full requirement of machinery and a supplementary indent will be necessary later on.

3. The indent is based on the assumption that the dams will be constructed of masonary in cement morter, the total period of construction being five years for each dam.

4. The Daddi project is still in a preliminary stage and as it will be essential to arrive at agreements with Indian States before undertaking the work it would be premature to order any machinery for that project at this stage.

5. In regard to the Tir Dam Project also there is enlement of doubt and I do not know whether we should take the risk of ordering out machinery in anticipation of the agreement with Bhor. Perhaps machinery required for the purpose of excavation only may be ordered out now. In the event of theproject being dropped by any chance the machinery would be useful for Govt.'s other projects. This may include pumping sets, air compressors, rockdrills Calyx drills cranes, some railway track and tipping wagons, motor trucks etc. The C.P.P.W.D. may be requested to prepare a detailed list.

6. The machinery for the Gangapur dam may be ordered. The C.P.P.W.D. may however be requested to consider the following remarks.

(1) The 10/7 Cft. cement concrete mixers are too small. 14/10 Cft. may be min. size to be ordered.

(2) Mr. Limaye informed me that the length of the light railway track tobe-ordered has not been calculated to the actual requirements at site. This may be done and thelengths correctly estimated.

(3) There is a lot of earthwork on the Gangapur dam and it would be desirable to make use of earth moving machinery. No provision

for this/some to/have been made in the indent.

8. Finally I would suggest that the indents of/machinery for Irrigation works should be dealt with on a seprate file and not mixed up with those for roads and other purposes. The office should take necessary action. I would also suggest that the future indents for road machinery may be/referred to Mr. K. M. Kantawala for remarks as this officer was specially sent to the U.S.A. to acquire knowledge of road machinery.

I agree
15/5/47

(7) It is presumed that the dams will largely be constructed departmentally with the assistance of piece-work.

Gen. Br. 6572/36(2)
P.W.D.

Resubmitted.

2. As directed in para. 8 of D. Secy's note on propage. the papers relating to purchase of machinery for Irrigations works have been separated from those relating to Road making machinery and two separate file Np.6572/36(1) and file No. 6572/36 (2) have been opened. This file will hereafter, deal with machinery for Irrigation works only.

3. As it has been decided that machinery for the Gangapur project should be purchased it is necy: to decide the procedure for the purchased, of the machinery;. In this con. please see para. 4 of the C.E., P.W.D.'s letter dated the 21-4-47, wherein he has asked for orders whether purchases should be made through the D.G.I.&S. or throught the local suppliers. As already pointed out in para. 5 of the O.N. dated the 25-3-47, there is no compulsion on Provl. Govts. to make purchases of machinery through the D.G.I.&S. The D.G.I.&S., however, enjoys certain advantages in regard to the securing of Import Licenses etc. and also by way of contact with the all India Market. On the other hand the procedure of making purchases direct contact with the local suppliers may be quicker provided there are no difficulties of getting import permits though that there is no reason why it should be more economical. In this con. attention is invited to Under Secy's note dated the 2-4-47

against para. 5 of the U.O. dated the 29-3-47 where in he has suggested we should allow the C.E., P.W.D. to make direct purchases in affew cases and find out whether it is quicker and more economical. These purchases will, as reqd. under the procedure be made through the Central Stores Purchasing Organisation. Orders, are therefore, solicited whether the S.E.?/P.W.D. may be authorised to purchased locally through the C.S.P.O. such items of machinery as are immediately reqd. and also all the minor items, provided the firms guarantee to supply them within a reasonable time.

4. It may be stated in this con. that indents for major items of machinery during the past few years were placed though the D.G.I.&S. This was done partly because of the difficulties created by war time restrictions most of which still continue.

5. As regards the indents tobe submitted to the D.G.I&S. the C.E., P.W.D. may asked to prepare the indents in consultation with the P.H.E. if any. It does not seem advisable to place indents from the Scott., as the D.G.I.&S. makes a number of querries which the Scott. cannot answer and has to refer to the C.E., P.W.D. thereby causing considerable delay.

6. The necy. draft to the C.E., P.W.D. will be put up on receipt oforders.

7. These papers will be shown to the F.D. after the cost of the various items is known and before placing firm indents.

Id/- Thro' D.F.(I)
12-7-47.

Id/-
14-7-47.

It has been decided to place indent for the plant and machinery required for the Sangapur Dam. For the Vir Dam it was suggested that only the plant required for excavation may be indented. Now, however, the position has changed and the agreement with the Khan Darbar is not likely to come off in near future.

The plant for the Vir Dam may therefore not be indented.

2. No plant for irrigation schemes in this the Northern Circle is included in the statement. The Moshra Scheme it is not already approved but being a small scheme it is not likely to need extensive plant. However, the C.E. P.W.D. may be requested to submit a list of whatever plant may be required for the scheme.

3. That leaves the question of indent for the Gangapur Dam only at present. The C.E.'s list seems to be fairly exhaustive. Although the method of construction (departmentally or through a single big contractor) is not decided, it seems fairly clear that the type of plant indented will be required on the work whatever the agency. Most of these will be required for general purposes of the construction. As it is necessary that indent of plant should precede the actual begining of the work it is desirable that the indents should be placed without delay.

4. As the method of indents the following three alternatives are open to us:-

(i) Indent throught the D.G.I.&S.

(ii) " " " C.S.P.O.

(iii) Indent directly from the suppliers.

I doubt if D.G.I.&S. agency can be as quick as we desire it to be. Our past experience is none too encouraging. The C.S.P.O. will not, I think, be a suitable agency. The indents are of a very technical nature the specifications drawn up are only indicative, nor would it be possible to define them in greater details lest some possible types be excluded. Alternative specifications, costs and the period of deliveries will be weighed before deciding upon the selection. To avoid delay, therefore, it appears advisable that the C.E.P.W.D. or the ex.engr. in charge of the work deals with the work. If so the following procedure may have to be followed:-

(i)Open tenders should be invited for various groups of the plant giving the fundamental specifications.

(ii) At the same time the American Purchase Mission may be requested to state whether they can help procuring the plant and if so at what rate and when.

Firm orders can then be placed for each group on the merits by the competent authority.

5. I think H.M. P.W.D. may see before orders are issued to the C.E. P.W.D.

Id/-
31-7-47.

Secy. (I) DTK.
30-7-47.

H.M. P.W.D.

I consider the proposals made in the concluding portion of para. 4 of the Deputy Secy. (I & F)'s note are likely to prove the most satisfactory and may be treated.

Id/-
31-7-47.

Id/-
5-8-47.

HM. P.W.D. Id/-
5-8-47.

Secdly.
Id/-
6-8-47.

Com. Mr. P.E.R. Mr. Ser
7-8-47.

Resubmitted with the necessary draft for approval.

Thro' J.S. (II)

Id/-
21-8-47.

Letter.

No. 6572/36 (2) Gen. T.W.D.
D.O., 1st September 1947.

To

The C.T., V.W.T.

Subject: Indents for machinery required for major irrigation works.

Reference: This Office No. 233/46-T, dated the 21/1/47.

2. It has been decided that indents for the plant and machinery required for the Ganguwal Dam only should be placed directly without delay with the suppliers and that with a view to avoid delay the following procedure should be followed in for the purpose:-

(i) Open tenders should be invited for various groups of the plant giving the fundamental specifications.

(ii) At the same time the American Purchase Mission may be requested to state whether they can help in procuring the plant and if so, on what rate and terms.

(iii) As soon as the suppliers' quotation re: the cost etc. of the required machinery are received, a comparative statement showing the requirements in respect of the various items as well as the cost involved in the purchase thereof should be submitted to Govt. for approval.

(iv) On receipt of the approval of Govt. firm orders detailing the specifications and other conditions for the supply of the plant and machinery e.g. instructions re: despatch, packing, payment, etc., should be prepared for each group after considering the merits of all the offers.

(v) The firm orders should be addressed by you direct to the suppliers concerned thro' the C. of I. & S. Para-

chasing Officer, B'bay forwarding copies of the same being forwarded to Govt. for i information .

3. The following remarks should please be considered while indenting for the machinery reqd. for the Gangapur Dam:-

(1) The 10/7 cubic feet cement concrete mixers are too small. 14/10 cft. may be the minimum size to be ordered.

(2) The lenght of the light railway track tobe ordered should be correctly estimated by calculating the actual requirements at site.

(3) There is a lot of earthwork in the Dam and it would be desirable to make use of earth moving machinery. No provision for this seems to have been made in the statement subtd. with your letter under reference.

4. As regards the requirements for the Deldi and the Vir Dam Projects it is considered that it would be premature to order any machinery for these Projects before the necessary agreements with the 2 Indian States concerned with them are arrived at.

5. No plant for irrign. schemes in the Northern Circle is included in the statement mentioned in para 3. (3) above. The Mashgo Scheme which is already approved is not likely to need extensive plant. A list of whatever plant required for the scheme should, however, be submitted to Govt. very urgently.

By order of the Govt. of B.

D.A. - Nil.

Copy forwarded to:-

The Educational and Industrial Department.

The Director of Industries & Stores Purchasing Officers, Bombay.

The S.E., P.C.,

The Ex.Engr. Irrign. Projects Dn. (Central),

The Ex.Engr., Irrign. Projects Dn. (North),

for information.

Id/-
23-8-47.

Id/-
1-9-47.

P.G.